FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD
TANK WASTE/HEALTH, SAFETY & ENVIRONMENTAL PROTECTION COMMITTEES
JOINT MEETING
October 8, 2002
Richland, WA

Topics in this Meeting Summary

This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Introduction and Welcome

Doug Huston, Chair of the Tank Waste committee, opened the meeting and welcomed everyone. He reminded the group to focus on developing the presentation on tank waste issues for the full Hanford Advisory Board (Board) in November.

Road Map of Retrieval and Closure Activities

Suzanne Dahl, Department of Ecology (Ecology), told the committees that in December 2001, when Ecology and the Department of Energy (DOE) began working with the Cleanup Constraints and Challenges Team (C3T) initiative and the Tri-Party Agreement (TPA) negotiations, the agencies decided to consider how to start dealing with retrieving the material from the tanks and entering into the tank closure process.

First, Ecology and DOE agreed that high-risk tanks will be a priority and decided on closure demonstrations for seven tanks: C-106, S-112, S-102, C-104, S-105, S-106, and S-103. Since no closure plans for closing underground tanks of Hanford's magnitude currently exist, a second step was reaffirming closure plans as regulatory vehicle and creating a decision document to move through the process.

The agencies have developed a three-tiered plan to address the Single Shell Tank (SST) Closure Plan. The first tier, closure plan content, includes groundwater monitoring, closure performance standards and other major steps that will be taken. The second tier,

waste management area (WMA) closure and post closure plans, includes WMA description, risk evaluation and other steps. The third tier, individual component closure plans, includes risk evaluation for residual contaminants, closure activities for individual components and other related steps. The seven tanks involved in the demonstrations will be identified as individual tanks rather than as one unit and anything related to the tank, including ancillary equipment used for stabilization, will require permitting.

Suzanne informed the group the process required a significant amount of risk assessments and assumptions because the process is unique and many aspects of the project would begin as unknowns. To manage the project, Ecology will have to insert individual tank risks into assessments and manage the project in a holistic manner. With those risk tools, it could be determined whether the waste that may remain in a tank would contribute to the overall risk or not, and therefore whether more material would need to be removed. Tank closure regulations state that tanks must be decontaminated to the highest possible degree before closure can occur and the agencies must have a plan to manage the tanks if they were to leak contaminants into the surrounding areas.

Suzanne reported that DOE must retrieve as much from the tanks as is technically possible and leave no more than 360 cubic feet in large tanks, 30 cubic feet in small tanks. The goal was 1% or less remaining in each tank, though there is room for judgment calls. If the remaining material amounts to greater than 1%, but is low risk, or there is less than 1% remaining, but what remains is high risk, the tank could be put in a holding pattern or it could be closed or not closed based on available information.

At the close of the project, DOE will have to determine if, during the closure process, they did as much as possible and report whether it compared favorably to the risk assessments. They would be required to report whether there were any outstanding concerns and if enough characterization or risk assessments had been completed. Ecology then would look at what DOE had produced and could request more material be retrieved or more analysis be completed. Finally, if Ecology determined that a tank closure is warranted, a final action would be taken, which could mean leaving the tank in a holding pattern, pouring binders into the tank, or the removing the tank entirely.

Committee Discussion

- On what is Ecology basing the calculated risk? Suzanne responded they would be looking at risk at the boundary of the facility and moving the point of compliance to where it was most appropriate. The primary risk driver would be the residual material in the tanks, and because of the depth of the tanks, groundwater is of greater concern than surface ecological risks. Paige Knight emphasized that many people would be relying on Ecology to watch DOE closely and listen to the concerns of the Board and the public. Suzanne replied that Ecology will look at the risk at the boundary and assured the group that if more could be achieved through retrieval or washing, Ecology would enforce that.
- How are the individual tanks isolated from the entire tank farm system? They are connected differently and the agencies are trying to avoid re-cleaning tanks due to the

infiltration of groundwater that has affected many of the tanks. Paige asked if Ecology had considered removing tanks from the ground. Suzanne said that they are looking at all options, including clean closure.

- Who will be writing the closure plans? Suzanne said that DOE writes the proposal and Ecology examines what has been done and what could be done. Ecology approves the final plan and provides the permits.

- There is concern that there was not any public involvement to make the decision about the seven tanks that may be closed. Wade Riggsbee felt that much of the solid contamination was greater than Class C and would need to be removed and shipped elsewhere. He encouraged Ecology to address that issue and look at the entire tank farm when making decisions. Suzanne responded that they are planning outreach for tribal groups and stakeholders; the Waste Management Area Closure Plan, Comprehensive Closure Plan, and other documents are all interrelated and Ecology will address comments in appropriate places within those documents.
- Phrases like "technically possible" may be subject to individual perception. Jim Trombold asked how Ecology determined the 1% quantity and questioned whether, because it was not 0%, that Ecology expected not to finish cleanup completely. Suzanne responded that the term "technically possible" was in the TPA and includes stricter standards than "technically probable" which take into account other factors including financial constraints. The agencies had originally expected to remove all material from the tanks, but soon realized that, in some cases, that may be unrealistic. The goal is 0%, but the expectation is 1%, and DOE would need to apply for a waiver to leave more than 1% in the tank. DOE must also determine whether or not the remaining material represents a risk.

- What does it mean to place a tank in a holding pattern? A "holding pattern" means that, since all risk may not be known until after tanks enter the closing process, Ecology can put a "hold" on a tank that represents a risk they are not comfortable with. That would allow Ecology to put a tank aside until they knew about the final risk allocation for the whole farm and make a final decision at that time.

- Is Ecology considering a No Action alternative? Ken Bracken suggested that perhaps there are tanks that do not contain material that presents a risk and asked if the calculation could factor that into the formula. Suzanne responded that issue was addressed in the TPA, for the purpose of comparison, but Ecology does not seriously consider it as an option because it is generally agreed that all the tanks contain hazardous material. DOE may consider a No Action alternative in its calculations, but Ecology will not.

- Will the agencies consider whether equipment used during the closure process would be needed for later cleanup efforts? Suzanne responded that tank status would be taken into consideration before isolating equipment in both radiological and chemical situations. Keith Smith expressed a strong belief that rules and processes must be rigid enough to persist through the generations.

- Are the seven tank demos moving on with suitable National Environmental Protection Act (NEPA) processes? Suzanne said the current plan for C-106 is to submit a State Environmental Protection Act (SEPA) checklist and the Environmental Assessment (EA) DOE is working on. For the rest of the tanks, Ecology will focus on the NEPA Environmental Impact Statement (EIS). Jim Rasmussen, Department of Energy's-Office of River Protection (DOE-ORP), offered to discuss the issue further outside of the meeting.

- Ken Bracken expressed the feeling the committee was wrapped up with the closure process and was not seeing that the retrieval technology had yet to be proven. He suggested moving forward with retrieval without being caught up in NEPA requirements. Wade Riggsbee felt the tendency would be to move from retrieval to closure without submitting to the necessary processes. Paige Knight added that the Performance Management Plan (PMP) focused more on closure than retrieval; that is why many committee members are concerned. Jim Rasmussen reminded the group that C-106 will demonstrate how DOE plans on retrieving high-risk waste in the future.

Implementing Accelerated Cleanup

John Swailes, DOE-ORP, presented the initiatives in place to move forward with closure and how DOE will be accelerating the process. In particular, John discussed the Performance-Based Initiatives (PBI's) negotiated with CHG to close up to 40 tanks by 2006. He also discussed reclassifying some tank wastes. John acknowledged the fear that DOE will move too quickly and haphazardly, but reminded the group that DOE must submit closure plans to Ecology and Ecology has to approve those plans.

John reported that DOE believes they are on track or ahead of schedule to complete interim stabilization, on schedule to remove tank liquids, and ahead of schedule in inserting pumps into the tanks. Future plans will take high-level waste out of Hanford and send it to Yucca Mountain or other sites in a safe, economical way. SST retrieval will be a high priority; the goal is time and economical efficiency so that a maximum amount of tanks could be emptied in the smallest timeframe and budget. John said DOE's focus is retrieving waste, cleaning the tanks well enough to close them, and completing the closure process, while including public involvement at appropriate spots along the way.

DOE will be looking at all sorts of wastes for supplemental treatment and disposal and will look at classifying some tank wastes as transuranic (TRU) waste, and processing them and and shipping them to the Waste Isolation Pilot Plant (WIPP). The priority is emptying the Double Shelled Tanks (DST) so that waste from the SST could be removed sooner.

Dale Allen, CH2M Hill Hanford Group (CHG), agreed with the committee and the agencies regarding the frustration associated with not being able to complete retrieval.

He said that the focus of CHG is environmental cleanup and that in order to build on their current successes, they would need to increase pumping. He reported being committed to building infrastructure to acceptable levels so that the vitrification plant could be opened and functional.

Ecology Perspective

Suzanne Dahl expressed serious concern that these new PBI's had been negotiated without first considering their impact on the TPA. John Swailes replied that Ecology was not involved in contract renewal, though they were aware of the things DOE was attempting to incentivize CHG to do. Suzanne said her understanding was DOE would follow TPA processes and retain the focus on the same tanks addressed in the M-45 change package negotiations. Ecology has not been involved in anything beyond those seven tanks, but Suzanne felt the negotiations should be included in the TPA because the selection of tanks and the reasons behind those selections should include Ecology.

Committee Discussion

- Will low-risk waste be vitrified before high-risk? John Swailes explained that C-106 was chosen because close to 99% of the waste had been removed already and it gives an opportunity to learn about closure processes with a tank close to completion. Other tanks are in advanced stages of planning and include high-risk waste; these represent a challenge that will provide other types of learning opportunities. He said the two tanks labeled the highest risk would go to treatment first. The ultimate goal is to prove DOE's plan works on all grades of waste.

- What will be treated in the pretreatment plant? The pretreatment plant building is not capable of handling TRU waste as an output. Many tanks have waste that would fall into the TRU category; some will be vitrified and others will be put into another form to be shipped to WIPP.

- Is there enough money in the budget to accomplish all that DOE has planned? John felt there is, though it would require reallocation of funds, taking money set aside for developing new technologies and putting that money toward taking the best available technologies and putting them to work in the field.

- Why is lower level waste not expected to be in as stable a form as high-level, vitrified waste? Keith Smith expressed concern over the health and safety ramifications of waste not made stable enough. John responded that the state regulates other waste forms besides vitrified glass and the intention is to build facilities that can handle the waste.

- Harold Heacock stated this was the first time the committee had heard about shipping tank waste to WIPP. Gerry Pollet asked if the EIS from WIPP included the separation of TRU waste with lesser forms than glassification. John said he was not familiar with WIPP's EIS, but said that some waste sent from Hanford would not be

vitrified. Gerry expressed concern that it may be predetermined that DOE would not do an EIS to transport waste to another site. Jim Rasmussen, DOE-ORP, added that they had planned a closure EIS covering closure scenario possibilities. He emphasized that the decision to continue through closure had not yet been made. John Swailes added he feels it would be difficult to achieve closure within the current regulatory framework.

C-106 Closure Plan

John Swailes discussed the C-106 retrieval and closure plan. DOE's goal was to have the EIS cover long term closure and include SST closure. The permit would be modified after all public comments had been received.

There were three sluicing campaigns between 1998-1999 which removed approximately 150,000 gallons. Approximately 30,000 gallons of liquid and 6,000 gallons of sludge remain (~3%) in the tank, although, based on recent pictures, there may be more sludge than anticipated. Dale Allen stated the reason sludge remains is that the pump in the tank was not long enough to reach the bottom. DOE plans to use an abandoned transfer pump to reach the remaining sludge.

To move forward through closure, four steps must be taken: remove remaining liquid, incorporate modified sluicing practices to remove solids, stabilize residuals, and close the tanks according to a set closure plan.

Suzanne pointed out that accelerated pumping and retrieval could be done without further NEPA/SEPA action. She acknowledged that the agencies need to consult with tribal nations in the latest round of permit modification and public involvement.

Committee Discussion

- How can public review and comment take place before the scheduled release of the sampling report? Suzanne responded that, through the NEPA/SEPA process, the agencies do not need detailed characterization from each site; there would not be much more to respond to after the report became available. People interested in responding to characterization could do so during the closure plan process. Paige Knight expressed fear that the public would not have a chance to provide significant input until after the decisions have been made. The public will be counting on Ecology not to make final decisions until after permitting is complete.
- Dan Simpson wanted to ensure that accelerating will not compromise the cleanup quality and suggested an expert panel to review the process and provide feedback on the project to determine if optimum alternatives were chosen.
- Al Boldt suggested that Suzanne add public participation to the closure demo timeline she developed. He also expressed concern that several items in the timeline were inconsistent. He asked that presenters be specific in the terms and dates they use in so that committee members will not have to assume or guess.

- Wade Riggsbee commented that it was not clear when the demonstrations would be complete. He asked that more discussion follow to demonstrate how timelines and demonstrations would fit together. John Swailes agreed and said that DOE must decide what level of risk would be acceptable.
- Tom Carpenter asked if, after the tank is closed, that the agencies would abandon the project. Suzanne responded that if the chosen option were to leave the tank in the ground with residuals still in place, then he would be correct. She said that the goal is to define the steps it would take to get to the point of regulatory approval.
- Jim Rasmussen restated that they will do an EA and if that document determines that there would be significant impact, they would take the appropriate NEPA actions.
- Gerry Pollet asked if there would be a public comment step in the Appendix H process. Suzanne responded that public comment would be available in the closure plan, not the Appendix H process. CHG is talking about accelerating the schedule with the idea that the sooner the agencies know what is in the tanks and how much residual material there is, the more straightforward the cleanup would be.
- Gerry asked when cost estimates would be available so the public can comment on the benefits of spending money on acceleration. Dale Allen said that DOE should have numbers available around January, after scoping and follow-on work. John Swailes provided a general estimate from a SST closure at Savannah River: according to Savannah River, the process of retrieving larger amounts than what would be required at C-106 was approximately $15 million. The goal would be to decrease cost to 10-20% of that total cost once the contractors and agencies became used to cleaning the tasks; hopefully settling around $2 million per tank.
- Ken Bracken reminded the group the demonstrations would just show what processes would be involved in tank cleaning. He emphasized the importance of CHG keeping accurate monetary and procedural records. He felt that $2 million per tank was too low to be considered a realistic estimate.

WTP Baseline Discussion/PMP Impacts

Bill Taylor, DOE-ORP, reported that Bechtel National Inc. (BNI) had submitted the baseline update in May of 2002. Design plans status increased from 15-40% and research, development and testing of melters returned positive results. BNI recruited several teams to analyze information and review the baseline. The results of their studies will be presented to the Energy System Acquisition Board on October 17, 2002 and include how the costs were estimated. Original estimates were $4.6 billion, but now approach $5.6 billion, which includes contingency funds.

Committee Discussion

- Do the consultant's numbers agree with DOE's figures? Bill Taylor said all estimates agree, though DOE hopes to finish below $5.6 billion,.

- How much of the necessary budget increase will be due to cost growth and the development of plans versus new requirements and additional throughput? Bill responded that due diligence would cover things that were not accurately covered in the proposal and maturing estimates with evolving designs would allow for more accurate estimates of materials and other resources.
- Tom Carpenter expressed concern that pressures from Headquarters to make the project cheaper may compromise the cleanup effort and quality assurance. Bill responded that the oversight had been very strong and there has been an improvement in independent analysis.
- Paige Knight expressed concern that aspects of the project continue to change in all directions. She would like a monthly update to inform the committee how close the agencies are to completing goals.
- Who accepts financial responsibility when extra materials are ordered or when permits are not written correctly and require rewriting? Bill Taylor responded that costs would be borne by DOE and the taxpayers. A BNI official assured the committee that they expect to complete the project on schedule, but would not do so at the expense of safety or quality.
- What is the cost of replacing vitrification with an alternative technology? Why should Hanford replace some vitrification with TRU waste treatment? Bill responded that removing one low-level melter would be zero cost to DOE because each melter can treat more waste than was first anticipated, so two melters would be able to treat as much as they thought three would be able to treat. Bill felt it would actually accelerate the project because they would be including a high-level melter that had not been included in original estimates.
- Ken Rueter, BNI, provided a timeline for treatment completion based on number of melters. He reported that, by increasing the number of high-level melters and decreasing number of low-level melters, the plant would be more productive.

Number of Each Type of Melters:	Approximate Completion Year:
1 high-level, 3 low-level (current baseline)	2100
2 high-level, 2 low-level	2070
Current Plan (System Plan)	2048
2 high-level, 2 low-level with more vitrification	2028

There was significant committee discussion over the effects on treatment capacity as a result of the loss of the 3rd low level melter, and whether the current plans implicitly assumed the use of as yet unproven supplemental technologies.

- If BNI builds the vitrification plant, who will run it? That decision will be made in 2006. Keith Smith added that an interim subcontractor might run it until a leader was decided later on.

Regulator Perspectives

- Suzanne Dahl said Ecology is planning on having permits lined up and ready when phases are completed so that work can continue in an unsegmented flow. There are two people on site monitoring the construction processes. She expressed concern regarding trading the third low-level melter for one high level melter. Bill Taylor responded it is a possibility to add the third melter at a later date, but the cost would be greater. The study has been commissioned to identify permitting requirements, NEPA requirements, and other tasks associated with adding a high level melter.
- Suzanne reported that Ecology is frustrated by the shift in melters. She felt that regardless of what the low-level melters could produce, they would be losing significant treatment capability by losing one low-level melter. Though capacity could be met with two melters, the expected rate of treatment could be greatly increased with three low-level melters. Suzanne also expressed concern that changes were occurring without any TPA analysis, risk assessments or public input.

Overall, the committee was not comfortable with DOE's presentation of tank closure and had some remaining questions. The committee felt DOE needs to provide a distinction between demonstration and closure that everyone can understand. DOE needs to clarify retrieval and closure processes and how they will be addressing NEPA procedures in the future.

- Dan Simpson felt that DOE should not assume that 99% removal would be either acceptable or unacceptable; closure should have allowances as to what substances are contained in each tank. Dan also emphasized that he thinks the PMP needs to be baselined as soon as possible.
- Dave Johnson requested an estimate of what would have to be built if DOE completed the project by 2028 using solely vitrification, and what the costs would be.
- Paige Knight asked when a solid baseline would be available. Greg Jones replied that DOE will present its baseline to Headquarters on October 17, 2002, but he is not certain when those numbers would be available for general viewing. Paige requested that DOE provide specific explanations as to how they came to the $5.6 billion figure. She recommended that they use simple language in order to be understandable to laymen and maintain trust within the community.
- Ken Bracken suggested defining the difference between what the PMP said should be done and what could be done and identifying what was causing the differences in the baseline.
- Bob Parks asked how DOE-ORP defined "high-level" waste. There was some confusion as to whether it was based on source, radiation or specific elements.

Planning for the November HAB Meeting

- Jeff Luke urged that the committee ask DOE-ORP what issues DOE feels are important that are not being acknowledged.

- The committee discussed what items should be addressed for the Board in November.

Baseline	PMP Acceleration	Decisions in Process	Outstanding Issues
# Melters	+ Supplementary technologies (initiative 2)	PBI's	Regulatory processes, how closure demos will feed back
Timeframe		M-45 (retrieval & closure of 7 tanks)	What ORP sees as issues impacting the process
Interim site storage		C-106	Regulator perspectives
Tank retrieval (TPA)		2x2 trend	Risk assessments? (Including future risk discussion)
		Away from all glass	Definition of terms (closure, closure plan, clean)
		20-46 tanks by 2006	Funding additional DST capacity?
		Management changes	What does DOE want to accomplish?

- Keith Smith , speaking on behalf of the Health, Safety, and Environmental Protection (HSEP) committee, asked what the future risks are if, in time, DOE finds that remediation was required below the tanks.
- Al Boldt asked that presenters at the Board meeting know the answers to likely questions that might arise, like "how clean is clean" when referring to tank closure. Suzanne responded that the closure plan would define "how clean is clean" whereas the EIS would allow DOE and Ecology to look at different alternatives and see the ramifications of each option. She agreed that it would be productive to know answers in advance.
- Paige Knight suggested having panels of interviewers ask DOE and Ecology predetermined questions so that information could be presented without lengthy, dry presentations. She also suggested posting a large piece of paper where Board members can pose questions or concerns.
- Jeff Luke felt the committee should understand what DOE plans to do and DOE should inform the committee what their concerns are. He felt that the complexity of the closure issue was not accurately reflected in the PMP. Jeff asked DOE-ORP to assist the committee in writing the questions posed at the Board meeting.
- There was disagreement between members of the committee whether the committee should discuss the TPA in the presentation portion of the meeting. After discussion,

the general consensus was to put all presentations and discussion in the context of the TPA.

- Paige suggested having a break between the tank treatment discussion and the closure discussions to prevent board members from confusing the two issues.
- The committee discussed who would present each section and who would be the interviewers and interviewees during the panel discussion. The committee decided that Roy Schepens, DOE-ORP, and Mike Wilson, Ecology, will present the overview and the framework of the advice; Paige and Dave will coordinate tank treatment and supplemental technologies; Ken and Doug will coordinate retrieval and closure; and Leon will coordinate the panel discussion. Greg Jones asked the committee specifically what they want to hear the agencies address. The committee responded they want to understand what DOE is currently doing to cleanup the tanks and what exactly is DOE-ORP's plan.

Regulator Perspectives

- Suzanne Dahl expressed concern over the segmentation of the presentations. The policy decisions being made without an EIS and against EIS history were making Ecology uneasy. Suzanne felt that DOE-ORP should not separate the topics based on contractor obligations because it would not be basing the separation on any rational distinctions.

Leon Swenson asked Greg and Suzanne for topics for potential Board advice.

- NEPA/SEPA tank closure public information
- Decision process for anything other than all vitrification
- SST retrieval by 2018
- M-45 change package

Handouts

- Tank Closure, Suzanne Dahl, Department of Ecology, October 8, 2002.
- River Protection Project, Tank C-106 Closure, John Swailes, DOE-ORP, October 8, 2002.
- Tank C-106 Inventory, CH2M Hill, August, 2002.
- Waste Types Definitions, Provided by Greg Jones.

Attendees

HAB Members and Alternates

Allyn Boldt	Doug Huston	Wade Riggsbee
Ken Bracken	Dave Johnson	Gordon Rogers
Tom Carpenter	Paige Knight	Dan Simpson
Clare Gilbert	Jeff Luke	Keith Smith
Harold Heacock	Bob Parks	Leon Swenson
Rebecca Holland	Gerald Pollet	Margery Swint
		Jim Trombold (phone)

Agency Staff, Contractors, and Others

Yvonne Sherman, DOE-RL	Michelle Anderson-Moore, Ecology	Fred Beramek, BNI
Al Hawkins, DOE-ORP	Laura Cusack, Ecology	Jim Betts, BNI
Gregory Jones, DOE-ORP	Suzanne Dahl, Ecology	Suzanne Heaston, BNI
T. Erik Olds, DOE-ORP	Jeff Lyon, Ecology	Ken Rueter, BNI
Delmar Noise, DOE-ORP	Jean Vanni, Ecology	Dale Allen, CH2M Hill
Jim Rasmussen, DOE-ORP		Moses Jarayssi, CH2M Hill
Woody Russell, DOE-ORP		Bryan Kidder, CH2M Hill
John Swailes, DOE-ORP		Geoff Tyree, CH2M Hill
		Courtney Harris, EnviroIssues
		Lynn Lefkoff, EnviroIssues
		Gloria Lummins, FH
		Barbara Wise, FH
		Kristy Collins, Infomatics
		Sharon Braswell, Nuvotec
		Kristin Lerch, Nuvotec
		John Stang, Tri-City Herald